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ABSTRACT

A study investigated the effectiveness of using thematic organizers to increase the reading comprehension of poor readers. The thematic organizer was used to expand the readers' prior knowledge by defining the implied thematic concept and presenting relevant examples of that concept. Twenty-four fourth, fifth, and sixth grade students who had been classified as below-average readers were assigned to one of two remedial reading tutorial groups. The tutors for these groups used the same teaching script with the following exception: tutors in the experimental condition used a thematic organizer with their reading assignments, while tutors in the comparison group used a set of prereading questions. Analyses of pretest and posttest comprehension scores showed that the students in the experimental group performed significantly better than the students in the comparison group on literal retellings, inferential retellings, literal recall questions, and inferential questions. The experimental group also recalled more of the most important idea units and more complete propositions (preserving the meaning of the original passage units) than did the comparison group. (RL)

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Using A Thematic Organizer To Develop Conceptual Comprehension In Fourth, Fifth, And Sixth Grade Remedial Readers

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Students with reading difficulties often are unable to comprehend major concepts of content materials. Comprehension problems may be the result of the instructional strategy, limited scope of comprehension questions asked by the teacher (Guszak, 1972), or abstract concepts which are not defined in the text (e.g., Pearson & Johnson, 1978). An inspection of social studies texts by these researchers revealed that thematic concepts were often implied or ill-defined.

Schema theorists suggest that providing and extending background experiences and knowledge prior to reading may enhance the readers' comprehension of difficult and/or abstract concepts. Several studies have verified that a statement of theme presented prior to reading increases comprehension for the passage (Bransford & Johnson, 1972; Dooling & Lachman, 1971). Pearson, Hansen and Gordon (1979) found that developing a schema for the content of a text resulted in significantly better performance on textually explicit and implicit questions. Omanson, Warren and Trabasso (1978) also found in their work with five and eight year olds that children are able to make inferences but often lack prior knowledge to draw inferences as related to a selected situation or content of a passage.

Many forms of prereading activities or pre-organizers have been used to develop prior knowledge to aid reading comprehension. Advance organizers (Ausubel, 1960, 1968), structured outlines (Glynn & DiVesta, 1977), structured overviews (Barron, 1969) and thematic titles (Adams, 1977; Adams & Collins, 1977; Bransford & Johnson, 1972; Dooling & Lachman, 1971) are some of the strategies reported to increase reading comprehension.

The role of prior knowledge seems to be essentially important when the reader is required to interpret implied and/or difficult

concepts. For comprehension to occur, the reader must be able to integrate new information into the knowledge already possessed. Therefore it is presupposed that the instructional strategy should extend the students' prior knowledge to develop a "cognitive readiness" for the new information presented in the text.

The purpose of this study was to investigate whether an instructional strategy could aid poor readers' comprehension of an implied concept by making it more explicit. The instructional strategy incorporated the use of a reading guide, a thematic organizer, which the student read prior to and during the reading of the text. The thematic organizer was used to expand the readers' prior knowledge by defining the implied thematic concept of a social studies passage and presenting examples of that concept which were thought to be relevant to the reader. In a study with a group of average readers, Alvarez (1980) found that the use of a thematic organizer aided literal and inferential comprehension of a thematic concept in a social studies passage.

To further the investigation of this strategy and evaluate its effectiveness with poor readers, the researchers attempted to answer several questions in this study. Would the provision of background information on the implied thematic concept enhance the ability of poor comprehenders to discuss and/or explain that concept after reading a social studies passage? Specifically: (a) Would poor comprehenders benefit from this instructional strategy as assessed by their ability to retell the literal and implied information presented by the author? (b) Would poor comprehenders increase their ability to answer literal and inferred questions on the passage? (c) Could students use the information presented in the thematic organizer to aid their ability to discuss and elaborate upon the literal and implied information of the text?

METHOD

Subjects

The sample for this study was twenty-four fourth, fifth, and sixth grade students who were referred to the Child Study Center of the Kennedy Research Center of Peabody College of

Vanderbilt University. These students had been classified as "below average" readers by their referring classroom teachers. The Child Study Center provides multidisciplinary diagnostic and intervention programs. An after school remedial reading tutorial program is one function of the Child Study Center. School-age students are referred to the remedial reading program by parents, classroom and/or resource teachers and psychologists in the community.

Procedure

At the beginning of the tutoring program all children were tested on the Gilmore Oral Reading Test, Form C, 1968. All students were stratified according to grade level and performance on the Gilmore reading comprehension subtest and then randomly assigned with replacement to either the experimental or comparison group. There were approximately the same number of girls and boys in each group. Students were tutored in either a one-to-one or one-to-two setting. The nature of these pairings was equivalent across the experimental and comparison groups.

The eighteen tutors for the study were pre-service teachers enrolled in an advanced undergraduate reading methods course entitled "Remedial Reading and Practicum." All tutors completed the course before the study was implemented. The tutors were randomly assigned with replacement to the experimental or comparison group. Neither the students or the tutors were aware of the nature of their group placement.

A script for the teaching procedure was provided for each group of tutors. Each set of tutors were taught to follow the script during two training sessions. During the interventions, tutors were observed (through one-way mirrors) by external evaluators who found little or no deviation from the script, with a reliability estimate of .98. A three week period was used for this study. There were two remedial sessions each week with a two day delay evaluation following the sixth session. The data collected on the sixth session and the two day delay were analyzed for this study. All students were pretested on four concepts

including the concept presented in the sixth session, four weeks prior to the commencement of this study. No student was able to define or discuss any of these concepts.

The tutors in each group followed a different set of procedures. The tutors in the comparison group were given a set of prereading questions and the passage which included its title. The prereading questions required the students to discuss literal information presented in the text and predict the meaning of the title and/or implied thematic concept of the passage. Students were asked to read the passage to answer these prereading questions or confirm their predictions.

In the experimental group, the tutors utilized the thematic organizer and the passage with the title included. The students were asked to read the thematic organizer prior to reading the passage, write their prediction statements and respond to the statements during or after reading the passage. They were told that they could refer back to the thematic organizer at any time as they read.

Following the reading all students were asked to retell what they read and answer ten questions (5 literal and 5 inferential). All responses were tape recorded and then typed as verbatim scripts by the tutors. For the comparison group, the time each student used to read the passage was recorded. Time for reading the thematic organizer and passage was recorded for each student in the experimental group.

During the study, several variables were held constant. Each tutor of both groups received equal conference time with the supervisor. All tutoring sessions were held under the same conditions (e.g., number and time of sessions, size of tutoring rooms, amount of observation time).

Materials

A set of social studies passages were collected from fourth and fifth grade textbooks. All passages contained an implied thematic concept which was judged to be a factor influencing the difficulty

level of the passage. Six expository passages were randomly selected from this set to be used as instructional materials for this study (see references). Each passage contained the mean length of 525 words. All texts were different from the one being used in the students' classroom.

A thematic organizer was written by the investigators for each passage using the procedure developed by Alvarez (1980). Each thematic organizer contained these components:

a) three paragraphs which introduced the concept to be studied and cited examples of the concept relevant to students' experiences.
b) two sentences which contained the concept. Directions required students to explain the sentences by restating them in their own words.
c) a set of 6 or 7 sentences which contained plausible and non-plausible information about the passage. Students were to indicate whether they agreed with the statements during or after their reading.

Five literal and five inferential comprehension questions were written for each passage by a group of reading specialists. These questions followed the students' retelling. The inferential questions were devised so that none of them could be answered by reading only the thematic organizer. Inferential questions required students to use information presented in the passage.

A passage entitled "The Reformers" from a fifth-grade text was selected for the sixth session. The title of the passage presented the implied concept which was not defined in the passage. The passage, which had 509 words within 39 sentences, was parsed into 57 idea units using the method described by R.E. Johnson (1970). Interrater reliability was .97. Idea units were rated for structural importance (interrater reliability of .97) to identify the least to most important units. Structural units were analyzed for action vs. description content. The division of these were relatively equitable across the four levels. It

was determined that differential recall of these units would be relatively uncontaminated by the distribution of the factors. Also, each of the four levels of structural importance occurred approximately equally often in each section of the text. Therefore it was assumed that recall of important units was not contaminated by primacy or recency effects.

ANALYSIS

After students completed their reading, each was asked to retell the passage and respond to five literal and five inferential questions. Scripts of students' retellings were typed and divided into idea units. Independent raters classified student responses as literal or inferred. Restatements of the information presented on the thematic organizer were coded separately and not analyzed with these data. All protocols were scored according to the degree to which they preserved the meaning of the original textual units (interrater reliability was .91). This scale was used:

3 - if the subject's idea unit is a verbatim recall or good paraphrase of the original unit.

2 - if the subject's idea unit is a verbatim recall or good paraphrase of a major part of the original unit.

1 - a somewhat vague paraphrase or only a small fragment of the original unit.

0 - incorrect response, no text related information.

Responses were also categorized according to their level of structural importance on a scale of 4 to 1. Responses to questions were evaluated as correct or incorrect by independent raters (interrater reliability was .94).

A two-way ANOVA with two factors (groups and trials) with one repeated measure over trials was used. The results indicated the following:

Literal retellings - Significant differences were found among group means for literal comprehension across groups and trials, $F(1,22) = 5.49$, $p < .03$ (Combined means for trials 1 and 2

were: Group A, experimental = 15.04 and Group B, comparison = 8.96). A one-way ANOVA indicated no significance at Trial 1.

Inferential retellings - Significant treatment effect for responses at inferential level across groups and trials, $F(1,22) = 19.46$, $p < .001$ (Combined means on repeated measures were: Group A, experimental = 6.08 and Group B, comparison = 0.50).

Literal questions - Significant differences were found among group means on literal recall questions across groups and trials, $F(1,22) = 21.30$, $p < .001$ (Combined means for trials 1 and 2 were: Group A, experimental = 2.50 and Group B, comparison = 0.96).

Inferential questions - Significant differences were found among group means on inferential questions across groups and trials, F 91,22) = 92.57, $p < .001$ (Combined means on repeated measures were: Group A, experimental = 3.58 and Group B, comparison = 0.62).

Total questions - Significant differences were found among means on inferential questions across groups and trials, $F(1,22) = 75.65$, $p < .001$ (Combined means on both trials were: Group A, experimental = 6.08 and Group B, comparison = 1.58).

No interaction occurred for time indicating that time was not a factor related to different performance between groups.

Secondly, the data were analyzed to determine whether the groups differed in their ability to recall structurally important units or preserve the meaning of the literal ideas. Since the experimental group was "primed" on inferred information, it was presupposed that these students may overlook literal ideas as they read to understand the implied concept. As noted above, the experimental group performed significantly better on literal comprehension than the comparison group. The analysis of the groups' performance also indicated that the experimental group recalled more of the most important idea units (4's and 3's). The percentage of most important idea units recalled by students in Group A (experimental) was 63% and 62% on Trials 1 and 2 respectively and for Group B, (comparison) 44% and 29% on the

same trials. More than half of the responses given by Group B were of least important idea units.

An interesting finding was also noted when students' idea units were compared for the degree to which they preserved the meaning of the original passage units. Students receiving the treatment recalled more complete propositions than students who were in the comparison group. Responses of students in the experimental group were rated as having high meaning retention and completeness. In trial 1, 94% of responses given by students in Group A and 68% of responses given by students in Group B were rated as 3 (complete restatement) or 2 (nearly complete restatement). On Trial 2, a difference also occurred; 68% of responses of Group A and 58% of responses in Group B were rated as a 3 or 2.

DISCUSSION

Students' performance on literal and inferential recall was influenced by the framework in which they were encouraged to place the events of the passage. Students used pre-existing knowledge (information about reformers) to elaborate on the implied concept of the text. The orienting nature of the thematic organizer seemed to encourage the reader to produce more important structural units and more complete and meaningful restatements of the propositions within the text and not just attend to the implied information discussed in the adjunct aid.

This study also indicates that the extent to which a textual passage is comprehended is not exclusively dependent upon the reader or the text itself. Instead, the study suggests that certain aspects of reading comprehension may be positively influenced by such factors as the type of organizer given prior to and along with a textual reading.

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